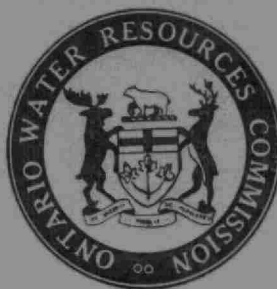


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THE
ONTARIO WATER RESOURCES
COMMISSION
WATER POLLUTION SURVEY
of the
TOWN OF NEW LISKEARD
in the
DISTRICT OF TIMISKAMING

1968

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380
N49
1968
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**TD
380
N49
1968**

Report on a water pollution
survey of the town of New
Liskeard, district of Timiskaming.

80393

Report

on a

Water Pollution Survey

of the

TOWN OF NEW LISKEARD

District of Timiskaming

February, 1968

District Engineers Branch

Division of Sanitary Engineering

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R E P O R T

THE ONTARIO WATER RESOURCES COMMISSION

INTRODUCTION

The Ontario Water Resources Commission is concerned with the management of the province's water resources as they are related to the needs of water supply, wastewater disposal and other areas of use. In keeping with this responsibility the Commission examines water quality in areas of active and potential use. This survey was made to locate and record any significant sources of water pollution in the Town of New Liskeard and to make recommendations concerning their abatement. In May and August of 1967, water samples for bacteriological and chemical examination were collected from surface waters and all of the known discharges to these waters. The results of certain samples collected by the Timiskaming Health Unit and samples collected during routine OWRC inspections of the municipal sewage works facilities are also used in this report. The appendix to the report includes the results of the samples collected in May and August 1967, an interpretation of the various tests, and an outline of water-quality and effluent objectives for water in Ontario. A map of the town showing the sample point locations is also appended.

I GENERAL INFORMATION

New Liskeard is located on Highway 11 approximately 100 miles north of North Bay. The assessed population for 1966 was 5,023. Lying on the west shore of Lake Timiskaming, it is situated

at the northern extremity of the major portion of the Ottawa River watershed. It should be noted that the sampling point positions on Lake Timiskaming are designated by their approximately mileage from the Ottawa River mouth.

II WATER USES

1. Municipal Water Supply

Virtually all of the town is serviced with municipal water, with the exception of that portion lying south of Melville Street. The water is obtained from three drilled wells. One well is used as a primary source while the other two wells are maintained as standby sources. The total rated pumping capacity is 1,360 gallons per minute (gpm). A total storage of 154,000 gallons is provided by a standpipe and ground storage reservoir. The average daily pumpage was slightly in excess of 400,000 gallons in 1965 and 470,000 gallons in 1966.

No treatment of the water is provided at present. The water from all the wells is hard and high in iron content. The Oak Street wells also have a fairly high natural fluoride content but not in excess of the allowable maximum of 2.4 ppm. The use of Calgon treatment for the high iron content was abandoned in 1964 and filtration is presently being considered. Complaints of odours are received from time to time which are probably due to the formation of hydrogen sulphide.

During 1965, a considerable number of unsatisfactory bacteriological samples were obtained from the standby wells. In 1966 more than 95 per cent of the samples were satisfactory; however, very close supervision of the bacteriological quality of the water has been recommended.

2. Private Water Supplies

A few private wells are used in the fringe areas of the town. Also, the entire area south of Melville Street is served by private wells with the exception of the recreation grounds which are now serviced with municipal water.

The results of samples from several of these well supplies, collected both privately and by the Timiskaming Health Unit have consistently indicated the water to be of doubtful or unsatisfactory quality. Correction of water-supply problems appears to be relatively difficult or impossible due to the congestion created by private water and sewage systems on relatively small lots. The extension of the municipal water supply to this area appears to be the only permanent solution.

3. Recreational Water Use

The New Liskeard Beach extending for almost a mile along the shore of Lake Timiskaming is an extremely popular swimming area serving the residents of the New Liskeard area and many tourists. The importance of having water of good sanitary quality in this area is obvious. The Wabi River is also used to some extent for swimming.

Boating is popular at New Liskeard, and during 1967 a privately operated marina was constructed at the foot of May Street to serve the boating public.

III WATER POLLUTION CONTROL

1. Sanitary Sewers and Sewage Disposal

The central portion of New Liskeard is served by sanitary sewers. Sewage is treated in an OWRC-operated 4-cell waste stabilization pond. This facility commenced operation early in 1965. Domestic sewage from approximately 4,500 persons or 90 per cent of the town is gravity-fed to two pumping stations from which sewage is directed via a forcemain to the waste stabilization pond.

A summary of samples analyzed to March 1967, reveals the following treatment efficiency:

	<u>Raw Sewage</u>	<u>Cell A</u>	<u>Final Effluent</u>		
			<u>Cell B</u>	<u>Cell C</u>	<u>Cell D</u>
No. of samples	8	9	8	9	9
Avg. 5-Day BOD (ppm)	42	15.6	12.4	9.8	10.9
Avg. Susp. Solids (ppm)	84	34	20	15	12
Per cent reduction of BOD		63	70	77	74
Per cent reduction of susp. solids		60	76	82	86

The figures indicate a normal treatment efficiency for this type of sewage works and an effluent which is generally within OWRC objectives for discharge to a watercourse. Although a very weak raw sewage is indicated in the results, recent samples have shown it to be closer to the normal range of 250 ppm for BOD and suspended solids.

The following results were obtained from seven sets of bacteriological samples collected from the effluent of each cell during May to November, 1966.

	Membrane Filter <u>Coliforms per 100 ML</u>		
	<u>0 - 10,000</u>	<u>10,000 - 50,000</u>	<u>Over 50,000</u>
No. of samples	13	11	4

Although, at times, fairly high coliform counts can be obtained in a waste stabilization pond effluent, the bacteria-removal efficiency of this method of treatment is generally considered to be very good. It is felt that lagoons deliver an effluent of high pathogen-free quality due to their normally long retention periods, since bacterial removal in the absence of the disinfecting agent is due to natural die-off. As indicated by the above sample results, a high degree of coliform removal is being obtained in this lagoon system.

2. Private Sewage Disposal

Some of the areas which are unsewered or partially sewerred include Market Street, Cedar Avenue, Dixon Street, High Street, Melville Street, Montgomery Street and all of the area south of Melville Street. Private septic tank and subsurface disposal systems are employed and several privies are still in use as well, mainly on Lakeshore Road south. Sewage from the privies is collected by the municipality on a routine basis.

3. Drainage

A system of storm sewers, combined sewers, and ditches convey storm flows to the Wabi River and Lake Timiskaming. Common manholes are used for storm and sanitary sewers on Whitewood Avenue. The sewers are laid at different elevations; the difference varies but is approximately 6 feet. In this type of system, excess storm flows can overflow to the sanitary sewer, but a flow of sanitary sewage to the storm sewers is uncommon. Where feasible, these are being separated. The manhole at Whitewood Avenue and Armstrong Street was sealed just prior to this survey to prevent the mixing of flows.

There are four catch basins on Niven Street conducting storm water directly to the sanitary sewers.

In the perimeter areas of the town, and mainly in the northwest and southern sections, ditches and culverts carry storm water flow.

4. Refuse Disposal

Refuse is disposed of on municipally owned land in the Township of Dymond. No complaints have been received concerning any effects which this operation may have on surface waters in the area.

5. Industry

The major industries in the town include two wood products plants, a dairy, an ice-cream plant, two bottling works, and an iron works. Sanitary wastes and any liquid industrial wastes from these

plants are discharged to the sanitary sewer system.

6. Watercraft

There are a number of fairly large pleasure boats at New Liskeard, but most are not equipped with toilet facilities and water pollution from this source is not a major problem.

Regulations to be administered by the OWRC concerning the control of the discharge of raw sewage from pleasure craft have been passed recently and will come into force in June 1968. The regulations specify approved types of devices which are to be used in the various watercraft and it is anticipated that, as a result of these regulations, a network of pumping and shore disposal systems will be established at regular docking areas.

IV RESULTS OF SURVEY

1. Storm Drainage System

The lack of sanitary sewers on Melville Street, Montgomery Street, and Lakeshore Road south of these streets presents a problem in that the effluent from malfunctioning private sewage disposal systems is gaining access to the storm drainage system in the area. A survey made by the Timiskaming Health Unit has revealed at least one-third of the 21 residences on Melville and Montgomery streets having discharges of inadequately treated sewage to a ditch at the rear of the premises. Also there are several similar problems on Lakeshore Road. The correction of these on a private basis is difficult due to the small lot sizes.

The following sources of water pollution to Lake Timiskaming as a result of these discharges in this area are apparent.

Sampling Point Number

Comment

OLT 434.26-W

This is a culvert on Lakeshore Road just north of the town limits. Although the flow appeared quite clear during both observation periods, a coliform count of 110,000 was obtained in a bacteriological sample.*

OLT 434.33-W

This culvert is located approximately 700 feet north of the southern town limits. The coliform counts of 71,000 and 24,000 were obtained here. There have been many complaints by area residents regarding pollution of this drainage course.

OLT 434.56-D

This is a ditch which drains to the lake at the south end of the park. Coliform counts of 610,000 and 46,000 were obtained at this point.

OLT 434.80-W

This is the outfall discharging drainage from the Melville and Montgomery street area to Lake Timiskaming. High BOD results and coliform counts were obtained in samples collected here and the presence of inadequately treated domestic wastes was visually evident.

OLT 435.1-W

A considerable quantity of oil and grease was noted in the ditch at May and Cedar streets on May 27. A sample of the flow revealed high BOD and suspended solids and phenol concentrations. Although there was no flow on August 25, an oil residue was apparent. The source of this appears to be Wilson's Truck and Tractor Sales and Service located at Armstrong and Cedar streets.

* see footnote at bottom of page 9

WO.3-W (N)

A high BOD and suspended solids concentration was found in the sample collected from this outfall which is a storm sewer discharge to the Wabi River at Armstrong Street. It was raining on May 27 when the sample was collected; however, on August 5, there was no flow from this outlet.

2. Lake Timiskaming

During the past, pollution of Lake Timiskaming in the vicinity of the New Liskeard beach has been severe enough to require the erection of warning signs for swimmers by the local health unit. The water quality in this area appears to have improved considerably since the abandonment of the old municipal septic tanks for sewage treatment. The appended sample results reveal coliform counts within the Commission objectives for surface waters; a number of excessive BOD values were noted in the general area of some of the contaminated storm sewer discharges. The elimination to these discharges is necessary to realize further improvement of water quality in the area.

3. Wabi River

Although the BOD values of samples collected from the Wabi River were generally within the objectives for surface waters, some high coliform counts, and slightly excessive suspended solids concentrations can be noted in the appended results. During 1967, two sets of bacteriological samples collected from the river by the Timiskaming Health Unit revealed the following results.

* since much of the flow in these culverts is spring water, the resulting dilution of any sewage effluent gaining access to these flows must be considered in assessing the laboratory results.

<u>General Location</u>	<u>Sampling Point No.</u>	<u>MPN</u>	
		<u>Total Coliforms per</u> <u>May</u>	<u>100 ML</u> <u>August</u>
Upstream from Lagoon outfalls.	1	2,000	1,100
	2	1,100	1,100
	3	460	1,100
	4	24,000	1,100
	5	1,100	1,100
	6	280	1,100
	7	1,400	1,100
	8	460	1,100
Near Lagoon outfalls.	9	12,000	4,600
Downstream to mouth of river.	10	4,600	4,600
	11	1,100	7,500
	12	15,000	11,000
	13	1,100	1,100
	14	2,400	4,600
At mouth of river.	15		46,000
	16		46,000
	17		46,000
	18		1,100
	19		11,000
	20		11,000

Varying coliform concentrations can also be noted from these results. High coliform and suspended solids concentrations can be expected at any point in this river since its tributaries rise in the surrounding rural townships and the river flows sluggishly through the clay belt farmland picking up agricultural runoff and silt along its course. Accordingly, the sample results reveal in some cases higher coliform concentrations upstream from the water pollution control facilities than directly downstream from them. However, the highest concentrations are in the downstream sections near the river mouth

and are undoubtedly influenced by discharges to the river within the town.

V DISCUSSION

In regard to the unsewered area in the south part of the town, there have been in the past several petitions from the area residents for the provision of both water and sewage services; also an engineering study was done about ten years ago to determine the cost of providing the services. Due to a number of reasons, including the cost of the project to the municipality and the rejection of the project in a plebiscite of the area residents, the problem has remained.

Although the pollution abatement programme carried out by the town in recent years is very commendable, favourable results have not yet been achieved in this area and it is recommended that a programme which will result in the extension of sanitary sewers to the area be reactivated.

VI SUMMARY

This is a report on a water pollution survey of the Town of New Liskeard which was made to locate and record existing and potential water pollution sources and to make recommendations concerning their abatement.

The main pollution problem which remains in New Liskeard is in the southern portion of the town where the absence of sanitary sewers results in the discharge of inadequately treated sewage to

the storm drainage system. Contamination of private drinking water supplies is also evident in this area.

Satisfactory sewage treatment is being attained by the municipal waste stabilization pond, and in general the water quality of Lake Timiskaming and New Liskeard has improved since the establishment of these sewage treatment works. However, some pollution can be noted as a result of the contamination in the storm drainage system.

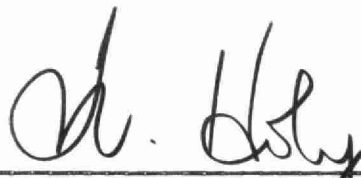
Due to the nature of the Wabi River and its surrounding area, high coliform and suspended solids contents are fairly common in this tributary which drains to Lake Timiskaming.

VII RECOMMENDATIONS

1. Municipal water and sanitary sewers should be extended to the southern portion of the municipality.
2. The discharge of oil from Wilson's Tractor Sales to the storm ditch should be eliminated.
3. The programme of sanitary and storm sewer separation should be continued.

/elc

Prepared by:



M.M. Holy, Technician,
Div. of Sanitary Engineering.

APPENDIX I

SIGNIFICANCE OF LABORATORY ANALYSES

Bacteriological Examination

The presence of coliforms indicates pollution from human or animal excrement, or from some non-faecal forms. The objectives for surface water quality in Ontario is a maximum of 2400 organisms per 100 millilitres.

The OWRC Laboratories employ the Membrane Filter (MF) technique of examination to obtain a direct enumeration of coliform organisms. The Department of Health Laboratories use the Most Probable Member (MPN) enumeration and coliform counts are reported as Total Coliform Organisms (TC) and Faecal Coliform Organisms (FC).

Sanitary Chemical Analyses

Biochemical Oxygen Demand (BOD)

Biochemical Oxygen Demand is reported in parts per million (PPM) and is an indicated of the amount of oxygen required for the stabilization of decomposable organic or chemical matter in water. The completion of the laboratory test required five days, under the controlled incubation temperature of 20° Centigrade.

The OWRC objective for surface water quality is an upper limit of four (4) ppm.

Solids

The value for solids, expressed in parts per million, is the sum of the values for the suspended and the dissolved matter in the water. The concentration of suspended solids is generally

the most significant of the solids analyses with regard to surface water quality. The effects of suspended solids in water are reflected in difficulties associated with water purification, decomposition in streams and injury to the habitat of fish.

Nitrogen

Ammonia Nitrogen or sometimes called free ammonia is the insoluble product in the decomposition of nitrogenous organic matter. It is also formed when nitrates and nitrites are reduced to ammonia either biologically or chemically. Some small amounts of ammonia, too, may be swept out of the atmosphere by rain water.

The following values may be of general significance in appraising free ammonia content: Low 0.015 to 0.03 ppm; moderate 0.03 to 0.10 ppm; high 0.10 or greater.

Total Kjeldahl is a measure of the total nitrogenous matter present except that measured as nitrite and nitrate nitrogens. The Total Kjeldahl less the Ammonia Nitrogen measures the organic nitrogen present. Ammonia and organic nitrogen determinations are important in determining the availability of nitrogen for biological utilization. The normal range for Total Kjeldahl would be 0.1 to 0.5 ppm.

Nitrite Nitrogen

Nitrite is usually an intermediate oxidation of ammonia. The significance of nitrites, therefore, varies with their amount, sources, and relation to other constituents of the

sample, notably the relative magnitude of ammonia and nitrite present. Since nitrite is rapidly and easily converted to nitrate, its presence in concentrations greater than a few thousandths of a part per million is generally indicative of active biological processes in the water.

Nitrate Nitrogen

Nitrate is the end product of aerobic decomposition of nitrogenous matter, and its presence carries this significance. Nitrate concentration is of particular interest in relation to the other forms of nitrogen that may be present in the sample. Nitrates occur in the crust of the earth in many places and are a source of its fertility.

The following ranges in concentration may be used as a guide: low less than 0.1 ppm; moderate 0.1 to 1.0 ppm; high greater than 1.0 ppm.

Anionic Detergents as ABS

The presence of anionic detergents as ABS is an indication that domestic waste is present.

Phenols

The presence of phenol or phenolic equivalents is generally associated with discharges containing petroleum products, or with wastes from some industries. It is generally conceded that adequate protection of surface waters will be provided if the concentration of phenols in waste discharges does not exceed

20 parts per billion (ppb). Phenolic type waste can cause objectionable conditions in water supplies and might taint the flesh of fish.

Iron

Water for domestic use should contain less than 0.3 parts per million of iron in order to avoid objectionable tastes, staining and sediment formation. Iron concentrations of not greater than 17 parts per million in waste discharges should permit adequate protection of surface waters.

APPENDIX

IMPLEMENTATION OF WATER AND SEWAGE WORKS PROGRAMS

Currently, there are three general methods which may be utilized for implementing sewage and water works programs. These are: 1) to enter into an agreement with the OWRC for the construction of the treatment and collector works with an obligation to pay the debt retirement and operating charges over the term of the agreement with the facility reverting to the municipality at the end of the term of the agreement, 2) by requesting the provision of service from a Provincially-owned project, and 3) by proceeding with the construction independently and meeting capital costs by the sale of debentures.

OWRC/MUNICIPAL PROJECTS

For the construction of water and sewage works under agreement with this Commission, the works are provided and developed under Sections 39 to 46 of the Ontario Water Resources Commission Act.

For this type of arrangement, the Commission utilizes a sinking fund and consequently the annual payments are based on a specific debt retirement period and the payments are unchanged for the period of the agreement. This type of project may be financed over a period of time up to a maximum of thirty years. The annual charges for projects constructed under this agreement are determined as follows:

1. Capital Repayment

As noted, OWRC financing is by the sinking fund method and an annual payment of approximately 2 per cent of the capital

cost is required to retire a debt over a thirty-year period.

2. Interest

On new Commission projects, interest is calculated at the current rate.

3. Reserve Fund

To provide money for repairs and replacements, Section 40 of The Ontario Water Resources Commission Act provides for the establishment of a reserve fund by the Commission. It is important to note that this fund is established in the name of the municipality and the balance consequently earns interest. It has now been established by Commission minute that the reserve fund billing for each project shall continue only until the fund reaches an amount of ten times the initial annual billing and the reserve fund billing shall be re-imposed only when the fund has been depleted to 80 per cent or less of the maximum amount.

4. Operating Costs

Under OWRC agreement, the municipality is responsible only for the operating costs directly attributed to the project in the municipality. Therefore, no charges are made by the Commission for the services of head office personnel who are available as required to advise on the satisfactory operation and maintenance of the project.

PROVINCIALY-OWNED WORKS

In June, 1967, the Honourable J. R. Simonett, Minister of Energy and Resources Management, made an announcement which expanded the authorization of this Commission for the provision of water supply and sewage treatment facilities. This new program allows the Commission to construct entire water and sewage works facilities for small municipalities. The capital costs of these can be amortized over a 40 year period.

A slight variation of this program could be implemented in that the municipality may request that this Commission provide only the major water and sewage works facilities as Provincially-owned works, and develop the water distribution and sewage collector systems under the standard type of Commission project. It would appear that where applicable, it would be more advantageous for the municipality to proceed on the basis of requesting this Commission to develop entire systems as Provincially-owned works.

The associated cost of supplying these works, including amortization of capital costs, together with operating and maintenance charges, will be recovered by the sale of service to the affected municipalities by rates determined on a usage basis. These facilities will be wholly-owned by the Province of Ontario and the arrangements for service will be formalized by contracts between the Commission and the municipality concerned. The installations will be operated entirely at cost with appropriate provision for adjustment in rate.

DEVELOPMENT

If a municipality, after considering the alternatives, wishes this Commission to consider Provincially-financed projects, application forms should be completed and submitted together with a resolution of the Municipal council. A draft of the suggested wording of the resolution is included with the application forms.

If the proposed works are to be built by the municipality on its own initiative or as a formal project under agreement with this Commission, it is required that the Council retain a consulting engineer to prepare preliminary engineering reports on the proposed work. If a Provincial system is contemplated, no action should be taken with respect to retaining a consulting engineering firm as the Commission will designate a consulting engineer to carry out the Provincial portion of the work and it would be advantageous if the municipal portion be studied and reported on by the same engineer.

TOWN OF NEW LISKEARD

RESULTS OF SAMPLES PERTAINING TO LAKE TIMISKAMING

TABLE I

SAMPLING POINT NO.	DESCRIPTION	DATE	5-DAY BOD (PPM)	SOLIDS			M.F. COLIFORM COUNT PER 100 ML	MPN		ESTIMATED FLOW	COMMENTS
				TOTAL (PPM)	SUSP. (PPM)	DISS. (PPM)		TOTAL COLIFORM ORGANISMS	FAECAL COLIFORM ORGANISMS		
OLT-434.2	LAKE TIMISKAMING AT SOUTH LIMITS OF TOWN.										
A	SHORE SAMPLE	MAY 24/67	2.7	108	20	88	790				
A	SHORE SAMPLE	AUG.23/67	3.0	66	9	57	1,620				
B	50-FEET OUT	AUG.23/67					280				
C	200-FEET OUT	AUG.23/67					220				
OLT-434.26-W	24-INCH CORRUGATED METAL CULVERT 300- FEET NORTH OF TOWN LIMIT.										
		MAY 24/67	1.7	108	20	88	790			10 GPM	CLEAR
		AUG.25/67	1.3	414	8	406		110,000	2,300	<1 GPM	CLEAR
OLT-434.33-W	18-INCH CORRUGATED METAL CULVERT 700 FEET NORTH OF TOWN LIMIT.										
		MAY 24/67	2.7	320	1	319	71,000			7 GPM	
		AUG.25/67	1.9	422	8	414		24,000	24,000	<1 GPM	
OLT-434.37-W	30-INCH CORRUGATED METAL CULVERT 1,000 FEET NORTH OF TOWN LIMIT.										
		MAY 24/67	2.1	272	1	271	22,000			10 GPM	
		AUG.25/67	1.8	372	9	363		23	0	2 GPM	
OLT-434.44	LAKE TIMISKAMING OPPOSITE WHITES TOURIST CAMP.										
A	SHORE SAMPLE	MAY 24/67	3.0	128	31	97	720				
A	SHORE SAMPLE	AUG.23/67	2.4	95	31	64	352				
B	50-FEET OUT	AUG.23/67					152				
C	200-FEET OUT	AUG.23/67					100				

TABLE I (CONTD)

SAMPLING POINT NO.	DESCRIPTION	DATE	5-DAY BOD (PPM)	SOLIDS			M.F. COLIFORM COUNT PER 100 ML	MPN		ESTIMATED FLOW	COMMENTS
				TOTAL (PPM)	SUSP. (PPM)	DISS. (PPM)		TOTAL COLIFORM ORGANISMS	FAECAL COLIFORM ORGANISMS		
OLT-434.56-D	DITCH DRAINING TO LAKE AT SOUTH END OF PARK.	MAY 24/67	2.8	266	1	265	610,000			12 GPM	CLEAR
		AUG. 25/67	2.8	310	5	305		46,000	46,000	2 GPM	CLEAR
OLT-434.57	LAKE TIMISKAMING AT SOUTH END OF PARK.										
A	SHORE SAMPLE	MAY 27/67	3.0	502	14	488	216				
A	SHORE SAMPLE	AUG. 23/67	2.6	54	7	47	580				
B	50-FEET OUT	AUG. 23/67					460				
C	200-FEET OUT	AUG. 23/67					240				
OLT-434.59-D	DITCH AT SOUTH END OF RACETRACK.	MAY 27/67					490			12 GPM	
		AUG. 25/67	3.2	662	28	634		46,000	23	<1 GPM	
OLT-434.65	LAKE TIMISKAMING AT CENTRE OF PARK.										
A	SHORE SAMPLE										
A	SHORE SAMPLE	AUG. 23/67	1.3	90	5	85	400				
B	50-FEET OUT	AUG. 23/67					270				
C	200-FEET OUT	AUG. 23/67					190				
OLT-434.75	LAKE TIMISKAMING AT PARK SWIMMING AREA.										
A	SHORE SAMPLE (NEAR DOCK)	MAY 27/67	4.8	78	19	59	40				
A	SHORE SAMPLE (NEAR DOCK)	AUG. 23/67	3.4	85	6	79	160				
B	50-FEET OUT	AUG. 23/67					150				
C	200-FEET OUT	AUG. 23/67					460				
OLT-434.80-W	30-INCH CORRUGATED METAL SUBMERGED OUT- FALL AT FLEMING DR. AND MONTGOMERY ST.	MAY 27/67	8.4	418	30	388	130,000				
		AUG. 25/67	17	460	39	421		46,000	46,000		SEPTIC EFFLUENT

TABLE I (CONTD)

SAMPLING POINT No.	DESCRIPTION	DATE	5-DAY BOD (PPM)	SOLIDS			M.F. COLIFORM COUNT PER 100 ML	MPN		ESTIMATED FLOW	COMMENTS
				TOTAL (PPM)	SUSP. (PPM)	DISS. (PPM)		TOTAL COLIFORM ORGANISMS	FAECAL COLIFORM ORGANISMS		
OLT-434.80	LAKE TIMISKAMING AT THE FOOT OF MONTGOMERY ST.										
A	SHORE SAMPLE	MAY 27/67	4.0	102	30	72	900				
A	SHORE SAMPLE	AUG.23/67	13.0	110	32	78	460				
B	50-FEET OUT	AUG.23/67					170				
C	200-FEET OUT	AUG.23/67					410				
OLT-434.90	LAKE TIMISKAMING AT THE FOOT OF WELLINGTON ST.										
A	SHORE SAMPLE										
A	SHORE SAMPLE	AUG.23/67	3.2	64	26	38	500				
B	50-FEET OUT	AUG.23/67					160				
C	200-FEET OUT	AUG.23/67					410				
OLT-434.96-M	30-INCH CORRUGATED METAL OUTFALL AT FOOT OF BAY ST.	MAY 27/67	5.4	364	72	292	40,000			25 GPM	FOAM
OLT-434.96	LAKE TIMISKAMING AT FOOT OF BAY ST. - SWIMMING AREA.										
A	SHORE SAMPLE										
A	SHORE SAMPLE	AUG.23/67	9.1	64	26	38	680				
B	50-FEET OUT	AUG.23/67					200				
OLT-435.05	LAKE TIMISKAMING NEAR FOOT OF MAY ST. - SWIMMING AREA.										
A	SHORE SAMPLE	MAY 27/67	4.4	104	25	79	96				
A	SHORE SAMPLE	AUG.23/67	7.0	52	14	38	350				
B	50-FEET OUT	AUG.23/67					240				
C	200-FEET OUT	AUG.23/67					90				

TABLE I (CONTD)

SAMPLING POINT NO.	DESCRIPTION	DATE	5-DAY BOD (PPM)	SOLIDS			M.F. COLIFORM COUNT PER 100 ML	MPN		ESTIMATED FLOW	COMMENTS
				TOTAL (PPM)	SUSP. (PPM)	DISS. (PPM)		TOTAL COLIFORM ORGANISMS	FAECAL COLIFORM ORGANISMS		
OLT-435.1-W	STORM OUTFALL AT FOOT OF MAY ST.	MAY 27/67	32	1118	444	674	11,700			15 GPM	SAMPLED AT MAY & CEDAR STS. OIL DISCHARGE
	PHENOLS (PPB) = 20	AUG. 25/67									NO FLOW
OLT-435.35	LAKE TIMISKAMING ADJACENT TO WABI RIVER MOUTH.										
A	SHORE SAMPLE										
A	SHORE SAMPLE	AUG. 23/67	2.1	100	22	78	119				
B	50-Feet OUT	AUG. 23/67					1,800				
C	200-Feet OUT	AUG. 23/67					960				

RESULTS OF SAMPLES PERTAINING TO WABU RIVER

[illegible]

TABLE 11 (CONTD)

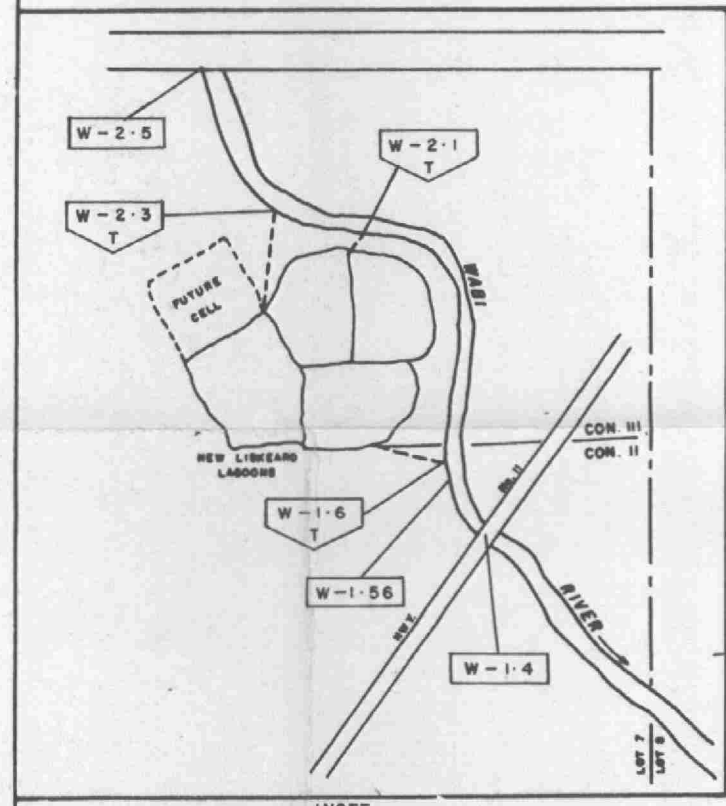
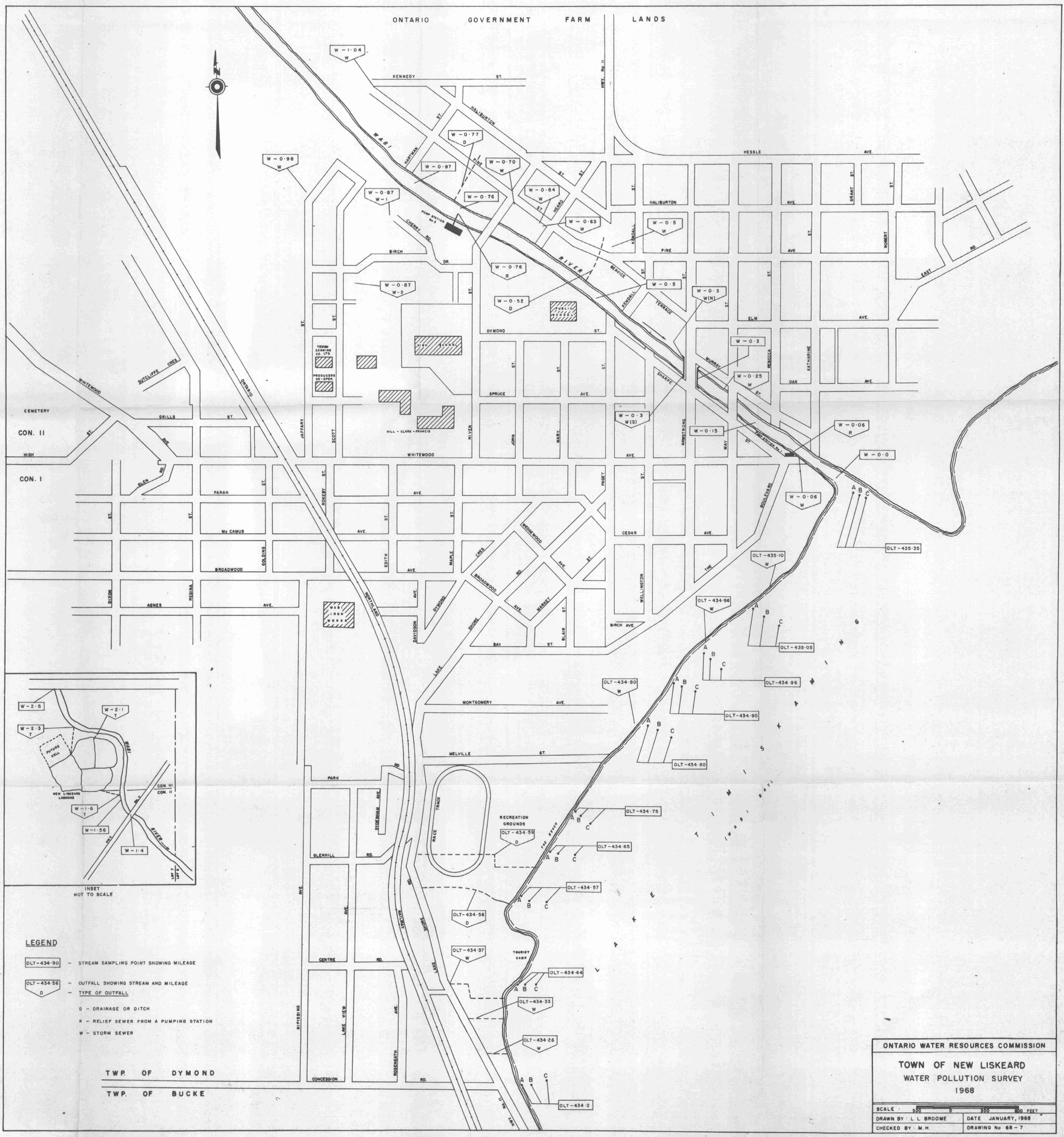
[illegible]

TABLE 11 (CONTD)

SAMPLING POINT NO	DESCRIPTION	DATE	5-DAY BOD (PPM)	SOLIDS			M.F. COLIFORM COUNT PER 100 ML	MPN		ESTIMATED FLOW	COMMENT
				TOTAL (PPM)	SUSP. (PPM)	DISS. (PPM)		TOTAL COLIFORM ORGANISMS	FAECAL COLIFORM ORGANISMS		
W-0.87-W-1	12-INCH CORRUGATED METAL OUTFALL AT FOOT OF CHERRY RD.	MAY 27/67	1.3	302	2	300	<4	9.1	0	15 GPM	CLEAR
		AUG.25/67	0.5	310	2	308				5 GPM	CLEAR
W-0.87-W-2	21-INCH CORRUGATED METAL OUTFALL SOUTH OF BIRCH DRIVE.	MAY 27/67					900	3.6	0	5 GPM	
		AUG.25/67	1.4	674	3	671				1 GPM	
W-0.98-W	10-INCH CORRUGATED METAL OUTFALL - JAFFARAY ST., NORTH.	AUG.25/67									NO FLOW
W-1.04-W	12-INCH CORRUGATED METAL OUTFALL AT KENNEDY ST.	AUG.25/67									NO FLOW
W-1.4	WABI RIVER AT HWY. 11.	MAY 24/67	2.2	118	22	96	432				
		AUG.23/67	1.9	134	49	85	250				
W-1.56	WABI RIVER JUST DOWN- STREAM FROM MOST SOUTHERLY LAGOON OUTFALL.	AUG.23/67	1.4	150	28	122	260				
W-1.6-T	OXIDATION POND EFFLUENT.	MAY 24/67	22.0	440	29	411					
W-2.1-T	OXIDATION POND EFFLUENT.	MAY 24/67	15	412	10	402	56,000				
		MAY 24/67	14	434	35	399					
		AUG.23/67	30	434	52	382					

TABLE II (CONTD)

SAMPLING POINT NO	DESCRIPTION	DATE	5-DAY BOD (PPM)	SOLIDS			M.F. COLIFORM COUNT PER 100 ML	MPN		ESTIMATED FLOW	COMMENT
				TOTAL (PPM)	SUSP. (PPM)	DISS. (PPM)		TOTAL COLIFORM ORGANISMS	FAECAL COLIFORM ORGANISMS		
W-2.3-T	OXIDATION POND EFFLUENT.	MAY 24/67	19	430	24	406					
W-2.5	WABI RIVER AT CONCESSION 4 DYMOND TOWNSHIP.	MAY 24/67	2.6	100	28	72	1,500				
		AUG. 23/67	0.9	132	28	122	450				



- LEGEND**
- OLT-434-90 - STREAM SAMPLING POINT SHOWING MILEAGE
 - OLT-434-56 - OUTFALL SHOWING STREAM AND MILEAGE
 - D - DRAINAGE OR DITCH
 - R - RELIEF SEWER FROM A PUMPING STATION
 - W - STORM SEWER

TWP. OF DYMOND
TWP. OF BUCKE

ONTARIO WATER RESOURCES COMMISSION

TOWN OF NEW LISKEARD
WATER POLLUTION SURVEY
1968

SCALE: 1" = 100' 0" 100' 0" 100' 0"

DRAWN BY: L. L. BROOME DATE: JANUARY, 1968

CHECKED BY: M. H. DRAWING No: 66-7